In the Claims

Claims 1-13 are canceled.

14. [Original] An interrogator of a backscatter communication system comprising:

a transmitter configured to output a local continuous wave signal and a radio frequency continuous wave signal; and

a receiver configured to receive the local continuous wave signal and a modulated radio frequency continuous wave signal, the receiver including:

a phase shifter configured to adjust a phase angle of the local continuous wave signal by a phase shift angle, the phase shifter including a first power divider configured to provide a first component and a second component of the local continuous wave signal, plural mixers configured to scale the first component and the second component using the phase shift angle, and a second power divider configured to combine the scaled first component and the scaled second component to provide an adjusted continuous wave signal; and

a coupler configured to combine the adjusted continuous wave signal and the modulated radio frequency continuous wave signal.

15. [Original] The interrogator according to claim 14 wherein the first power divider is configured to provide the signal into quadrature components.

16. [Original] The interrogator according to claim 14 wherein the first power divider comprises a ninety degree power divider configured to provide the signal into a sine component and a cosine component.

17. [Original] The interrogator according to claim 14 further comprising a storage device configured to store plural sine values and plural cosine values and output a sine value and a cosine value individually corresponding to the phase shift angle.

18. [Original] The interrogator according to claim 14 further comprising a storage device configured to store a sine value and a cosine value individually corresponding to the phase shift angle.

19. [Original] The interrogator according to claim 18 wherein the mixers are coupled with the storage device and individually configured to multiply one of the first and second components by one of the sine value and the cosine value.

20. [Original] The interrogator according to claim 14 wherein the second power divider comprises a zero degree power divider configured to add the scaled first component and the scaled second component.

Claims 21-34 are canceled.

35. [Original] A method of operating a coherent interrogator of a backscatter communication system comprising:

outputting a radio frequency continuous wave signal;

providing a local continuous wave signal;

receiving a modulated continuous wave signal;

providing a phase shift angle;

adjusting the phase of the local continuous wave signal using the phase shift angle to provide an adjusted continuous wave signal, the adjusting including:

providing the local continuous wave signal into a first component and a second component;

scaling the first component using the phase shift angle;

scaling the second component using the phase shift angle; and

combining the first component and the second component after the scalings to shift the phase angle of the local continuous wave signal by the phase shift angle; and

combining the adjusted continuous wave signal and the modulated continuous wave signal.

36. [Original] The method according to claim 35 wherein the providing the signal into a first component and a second component comprises providing the signal into quadrature components.

37. [Original] The method according to claim 35 wherein the providing the signal into a first component and a second component comprises providing the signal into a sine component and a cosine component.

38. [Original] The method according to claim 35 further comprising storing a plurality of sine values and cosine values and outputting a sine value and a cosine value individually corresponding to the phase shift angle.

39. [Original] The method according to claim 35 further comprising storing a sine value and a cosine value individually corresponding to the phase shift angle.

40. [Original] The method according to claim 39 wherein the scalings individually comprise multiplying one of the first component and the second component by one of the sine value and the cosine value.

41. [Original] The method according to claim 35 wherein the combining comprises adding the scaled first component and the scaled second component.

42. [Previously Presented] The system according to claim 14 wherein the receiver further comprises a phase adjuster configured to adaptively select the phase shift angle responsive to the modulated radio frequency continuous wave signal.

43. [Previously Presented] The system according to claim 42 wherein the phase adjuster is configured to search a plurality of different phase shift angles to select the phase shift angle.

44. [Previously Presented] The system according to claim 42 wherein the phase adjuster is configured to adaptively select the phase shift angle at a plurality of moments in time to provide a reduction of amplitude of the modulated radio frequency continuous wave signal at a frequency of the radio frequency continuous wave signal.

45. [Previously Presented] The method according to claim 35 wherein the providing the phase shift angle comprises selecting one of a plurality of phase shift angles responsive to the modulated continuous wave signal.

46. [Previously Presented] The method according to claim 45 wherein the selecting comprises selecting a plurality of different phase shift angles at a plurality of moments in time.

47. [Previously Presented] The method according to claim 45 wherein the selecting comprises selecting to provide a reduction of amplitude of the modulated continuous wave signal at a frequency of the radio frequency continuous wave signal.

48. [Previously Presented] A backscatter communication method comprising:

outputting a radio frequency continuous wave signal;

providing a local continuous wave signal;

receiving a modulated continuous wave signal;

providing a phase shift angle by selecting one of a plurality of phase shift angles responsive to the modulated continuous wave signal, such phase shift angle selected to provide a reduction of amplitude of the modulated continuous wave signal at a frequency of such radio frequency continuous wave signal;

adjusting the phase of the local continuous wave signal using the phase shift angle to provide an adjusted continuous wave signal, the adjusting including:

providing the local continuous wave signal into a first component and a second component;

scaling the first component using the phase shift angle;

scaling the second component using the phase shift angle; and

combining the first component and the second component after the scalings to shift the phase angle of the local continuous wave signal by the phase shift angle to yield such adjusted continuous wave signal; and

combining the adjusted continuous wave signal and the modulated continuous wave signal.

49. [Previously Presented] The method according to claim 48 further comprising matching an amplitude of the local continuous wave signal to an amplitude of the modulated continuous wave signal, and wherein the selecting comprises selecting responsive to the matching.

50. [Previously Presented] The method according to claim 49 wherein the selecting comprises selecting to minimize the amplitude.

51. [Previously Presented] The method according to claim 49 wherein the selecting comprises selecting to maximize a reduction of the amplitude.

52. [Previously Presented] The method according to claim 48 wherein the outputting the radio frequency continuous wave signal and the providing the local continuous wave signal comprise outputting and providing respective signals individually comprising a single constant frequency.

53. [Previously Presented] The method according to claim 48 wherein the selecting further comprises:

shifting the local continuous wave signal using the plurality of phase shift angles; and

monitoring the amplitude of the modulated continuous wave signal corresponding to shifting using respective ones of the plurality of phase shift angles, and wherein the

selecting comprises selecting the one of the phase shift angles providing the greatest reduction in the amplitude.

54. [Previously Presented] An interrogation method comprising:

outputting a radio frequency interrogation signal using an interrogator;

providing a local signal corresponding to the interrogation signal;

receiving a modulated signal using the interrogator and responsive to the outputted radio frequency interrogation signal;

selecting one of a plurality of phase shift angles responsive to the received modulated signal;

shifting a phase of the local signal according to the selected phase shift angle to provide a phase shifted local signal, the shifting comprising scaling a plurality of components of the local signal according to the selected phase shift angle; and

combining the phase shifted local signal and the modulated signal.

55. [Previously Presented] The method according to claim 54 wherein the shifting further comprises dividing the local signal into the components before the scaling, and combining the components after the scaling.

56. [Previously Presented] The method according to claim 54 further comprising matching an amplitude of the local signal to an amplitude of the received modulated signal, and wherein the selecting comprises selecting responsive to the matching.

57. [Previously Presented] The method according to claim 54 wherein the selecting comprises selecting the one of the phase shift angles which provides a reduction of amplitude of the modulated signal.

58. [Previously Presented] The method according to claim 57 wherein the providing comprises providing the local signal comprising a continuous wave signal, and wherein the combining the phase shifted local signal comprises combining to reduce the amplitude at the frequency of the local continuous wave signal.

59. [Previously Presented] The method according to claim 57 wherein the selecting comprises selecting to minimize the amplitude.

60. [Previously Presented] The method according to claim 57 wherein the selecting comprises selecting to maximize a reduction of the amplitude.

61. [Previously Presented] The method according to claim 54 wherein the local signal comprises a continuous wave signal comprising a single constant frequency.

62. [Previously Presented] The method according to claim 54 further comprising:

shifting the local signal using the plurality of phase shift angles; and

monitoring an amplitude of the modulated signal corresponding to the shifting the local signal using respective ones of the plurality of phase shift angles, and wherein the selecting comprises selecting the one of the phase shift angles providing the greatest reduction in the amplitude.

63. [Previously Presented] A signal processing method comprising:

receiving a modulated signal using a receiver of an interrogator;

providing a local signal from a transmitter of the interrogator to the receiver;

shifting a phase of the local signal comprising:

selecting one of a plurality of phase shift angles responsive to the received modulated signal;

dividing the local signal into a plurality of components;

scaling the components according to the selected phase shift angle; and

combining the components after the scaling to provide a phase shifted local signal; and

combining the modulated signal and the phase shifted local signal to provide a reduction of amplitude of the modulated signal.

64. [Previously Presented] The method according to claim 63 further comprising matching an amplitude of the local signal to an amplitude of the received modulated signal, and wherein the selecting comprises selecting responsive to the matching.

65. [Previously Presented] The method according to claim 63 wherein the providing comprises providing the local signal comprising a continuous wave signal, and wherein the combining the modulated signal comprises combining to reduce the amplitude at the frequency of the local continuous wave signal.

66. [Previously Presented] The method according to claim 63 wherein the selecting comprises selecting to minimize the amplitude.

67. [Previously Presented] The method according to claim 63 wherein the selecting comprises selecting to maximize a reduction of the amplitude.

68. [Previously Presented] The method according to claim 63 wherein the local signal comprises a continuous wave signal comprising a single constant frequency.

69. [Previously Presented] The method according to claim 63 wherein the shifting further comprises shifting the local signal using the plurality of phase shift angles, and further comprising monitoring the amplitude of the modulated signal corresponding to the shifting using respective ones of the plurality of phase shift angles, and wherein the selecting comprises selecting the one of the phase shift angles providing the greatest reduction in the amplitude.

70. [Previously Presented] An interrogator comprising:

a transmitter configured to originate a radio frequency interrogation signal and a local signal corresponding to the radio frequency interrogation signal; and

a receiver configured to receive the local signal and to receive a modulated signal responsive to the radio frequency interrogation signal, wherein the receiver is configured to divide the local signal into a plurality of components, to scale the components according to a plurality of phase shift angles at a plurality of different moments in time, and to combine the components after the scaling to provide a phase shifted local signal, wherein the receiver is further configured to combine the phase shifted local signal and the modulated signal to reduce an amplitude of the modulated signal at the plurality of moments in time.

71. [Previously Presented] The interrogator according to claim 70 wherein the receiver is configured to select the plurality of phase shift angles at the different moments in time responsive to the received modulated signal.

72. [Previously Presented] The interrogator according to claim 70 wherein the receiver is configured to match an amplitude of the local signal to an amplitude of the received modulated signal, and to select the plurality of phase shift angles responsive to the matching at the plurality of different moments in time.

73. [Previously Presented] The interrogator according to claim 70 wherein the receiver is configured to select the phase shift angles to minimize the amplitude of the modulated signal at a frequency of the local signal comprising a continuous wave signal having a single constant frequency.

74. [Previously Presented] The interrogator according to claim 70 wherein the receiver is configured to select the phase shift angles at the plurality of different moments in time, the selecting comprising, for an individual moment in time, monitoring the amplitude of the modulated signal corresponding to scaling using a plurality of possible phase shift angles at the respective moment in time, and selecting one of the phase shift angles which provides the greatest reduction in the amplitude.

75. [Previously Presented] An interrogator comprising:

a transmitter configured to originate a radio frequency interrogation signal and a local signal corresponding to the radio frequency interrogation signal; and

a receiver configured to receive the local signal and to receive a modulated signal responsive to the radio frequency interrogation signal, wherein the receiver is configured to select one of a plurality of phase shift angles, to adjust a phase of the local signal using the selected one of the phase shift angles comprising scaling the local signal using the selected one of the phase shift angles, and to combine the phase shifted local signal with the modulated signal to reduce bleed through of a carrier signal of the modulated signal.

76. [Previously Presented] The interrogator according to claim 75 wherein the receiver is configured to select one of the phase shift angles responsive to the received modulated signal.

77. [Previously Presented] The interrogator according to claim 75 wherein the receiver is configured to divide the local signal into a plurality of components, and the scaling comprising scaling the components.

78. [Previously Presented] The interrogator according to claim 75 wherein the local signal comprises a continuous wave signal having a single constant frequency, and the modulated signal comprises a modulated continuous wave signal, and the receiver is configured to combine the phase shifted local signal and the modulated signal to reduce the bleed through of the carrier signal comprising the single constant frequency.

79. [Previously Presented] The interrogator according to claim 14 wherein the local continuous wave signal is communicated via a wired medium intermediate the transmitter and the receiver and the radio frequency continuous wave signal is communicated via a wireless medium intermediate the transmitter and the receiver.

80. [Previously Presented] The interrogator according to claim 14 wherein the local continuous wave signal and the radio frequency continuous wave signal individually comprise a substantially constant frequency and amplitude.

81. [Previously Presented] The method according to claim 35 wherein the outputting and providing comprise outputting and providing using a transmitter, and wherein the receiving comprises receiving the modulated continuous wave signal comprising a wireless radio frequency signal within a receiver, and further comprising receiving the local continuous wave signal within the receiver via a wired medium intermediate the transmitter and the receiver.

82. [Previously Presented] The method according to claim 35 wherein the radio frequency continuous wave signal and the local continuous wave signal individually comprise a substantially constant frequency and amplitude.

83. [Previously Presented] The method according to claim 54 wherein the outputting and the providing comprise outputting and providing using a transmitter, and the receiving, the selecting, the shifting and the combining comprise receiving, selecting, shifting and combining using a receiver.

84. [Previously Presented] The method according to claim 83 wherein the receiving comprises receiving the modulated signal via a wireless medium and further comprising receiving the local signal via a wired medium intermediate the transmitter and the receiver.

85. [Previously Presented] The method according to claim 54 wherein the radio frequency interrogation signal and the local signal individually comprise a substantially constant frequency and amplitude.

86. [Previously Presented] The interrogator according to claim 75 further comprising a wired medium configured to communicate the local signal intermediate the transmitter and the receiver, and wherein the receiver is configured to receive the modulated signal comprising a wireless signal.

87. [Previously Presented] The interrogator according to claim 75 wherein the radio frequency interrogation signal and the local signal individually comprise a substantially constant frequency and amplitude.